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Table of Contents

Editorials

- 1 The *JTCVS*: A year in review**
Lawrence H. Cohn, MD
- 2 Editors and Council**
- 5 Surgery for adults with congenital heart disease should be performed by congenital heart surgeons**
Joseph A. Dearani, MD, Rochester, Minn
- 8 Uric acid levels and outcomes from coronary artery bypass grafting: Is it the chicken or the egg? ▲**
Harold L. Lazar, MD, Boston, Mass
- 9 Man and machine: Understanding the complex physiologic interactions to reduce complications**
Nicholas G. Smedira, MD, Cleveland, Ohio

General Thoracic Surgery (GTS)

- 11 Lobectomy by video-assisted thoracic surgery (VATS) versus thoracotomy for lung cancer**
 *Raja M. Flores, MD, Bernard J. Park, MD, Joseph Dycoco, BA, Anna Aronova, BA, Yael Hirth, Nabil P. Rizk, MD, Manjit Bains, MD, Robert J. Downey, MD, and Valerie W. Rusch, MD, New York, NY*

A comparative analysis of patients undergoing VATS lobectomy or thoracotomy was performed. Biostatistical analyses controlled for known confounding variables. Long-term survival was equivalent, but patients undergoing VATS lobectomy had a 2-day shorter length of stay.
- 19 Solitary fibrous tumors of the pleura: Results of surgical treatment and long-term prognosis**
Karen M. Harrison-Phipps, MD, Francis C. Nichols, MD, Cathy D. Schleck, BS, Claude Deschamps, MD, Stephen D. Cassivi, MD, MSc, Paul H. Schipper, MD, Mark S. Allen, MD, Dennis A. Wigle, MD, PhD, and Peter C. Pairolero, MD, Rochester, Minn

Solitary fibrous tumors of the pleura are uncommon neoplasms distinct from mesothelioma. We present our experience with the surgical management and long-term follow-up of 84 patients with both benign and malignant solitary fibrous tumors.
- 26 Comparison of patterns of relapse in thymic carcinoma and thymoma**
James Huang, MD, Nabil P. Rizk, MD, William D. Travis, MD, Gregory J. Riely, MD, PhD, Bernard J. Park, MD, Manjit S. Bains, MD, Joseph Dycoco, BA, Raja M. Flores, MD, Robert J. Downey, MD, and Valerie W. Rusch, MD, New York, NY

Thymoma and thymic carcinoma are distinct histologic entities but are often treated similarly. We reviewed our recent experience with the surgical management of thymic tumors to define patterns and predictors of relapse. Patterns of relapse differ significantly between thymic carcinoma and thymoma with greater propensity for distant failures, earlier relapse, and lower progression-free survival.

(continued on page 14A)

Table of Contents (continued)

32 Composite cervical skin and cartilage flap provides a novel large airway substitute after long-segment tracheal resection

Dominique Fabre, MD, Sunil Singhal, MD, Vincent De Montpreville, MD, Benoit Decante, MSc, Sacha Mussot, MD, Olivier Chataigner, MD, Olaf Mercier, MD, Frederic Kolb, MD, Philippe G. Darteville, MD, and Elie Fadel, MD, Le Plessis Robinson, France

We report the surgical technique and the results of an autologous tracheal substitute for long-segment tracheal resection in animals. Airway reconstruction with autologous cervical skin flaps scaffolded with costal cartilages is a novel approach to replace long segments of resected trachea.

40 Recurrent intrathoracic thymomas: Potential prognostic importance of cell-cycle protein expression

Tommaso C. Mineo, MD, Vincenzo Ambrogio, MD, Alfonso Baldi, MD, Eugenio Pompeo, MD, and Davide Mineo, MD, Rome and Naples, Italy

Prognostic factors of 25 patients with intrathoracic recurrence after radical thymectomy were analyzed. Significant prognostic factors were incomplete resection of the recurrence ($P = .03$), first disease-free interval (<24 months) ($P = .03$), and combination of cell-cycle protein expression ($P = .0001$), the latter being the most significant at multivariate analysis and disclosing a potential prognostic importance.

Acquired Cardiovascular Disease (ACD)

46 Hybrid endovascular aortic arch repair using branched endoprosthesis: The second-generation "branched" open stent-grafting technique



Kazuo Shimamura, MD, Toru Kuratani, MD, PhD, Goro Matsumiya, MD, PhD, Yukitoshi Shirakawa, MD, PhD, Mugiho Takeuchi, MD, Hiroshi Takano, MD, PhD, and Yoshiki Sawa, MD, PhD, Osaka, Japan

We describe a new hybrid operative technique for aortic arch repair using branched endoprosthesis (branched open stent-grafting technique). It provided satisfactory early and midterm results, which suggest this procedure is an attractive alternative to conventional aortic arch replacement.

54 Intraoperative bypass graft flow in intra-aortic balloon pump-supported patients: Differences in arterial and venous sequential conduits

Francesco Onorati, MD, Giuseppe Santarpino, MD, Antonio Rubino, MD, Lucia Cristodoro, MD, Cristian Scalas, MD, and Attilio Renzulli, MD, PhD, Catanzaro, Italy

An observational study on the modifications of the CABG flowmetry during IABP was reported. Transit-time flow measurements on 442 grafts showed IABP improved diastolic and mean blood flow, with greater improvements in arterial and sequential grafts. Graft failure was associated with poor results, high pulsatility index, and absent surplus graft flow.

62 Myocardial viability and cardiac dyssynchrony as strong predictors of perioperative mortality in high-risk patients with ischemic cardiomyopathy having coronary artery bypass surgery

Michaela Maruskova, MD, Pavel Gregor, MD, DSc, Jozef Bartunek, MD, PhD, Jaroslav Tintera, PhD, and Martin Penicka, MD, PhD, Prague, Czech Republic, and Aalst, Belgium

We tested the hypothesis that assessment of myocardial viability and LV dyssynchrony will predict perioperative mortality in 79 high-risk patients (EuroSCORE $> 10\%$) with ischemic LV dysfunction (ejection fraction $30\% \pm 6\%$) having CABG. The presence of significant dyssynchrony (≥ 105 ms) and absence of myocardial viability (<5 segments) independently predicted 30-day mortality ($P < .01$).

(continued on page 15A)

- 69 Outcomes of double valve surgery for active infective endocarditis**
Amir M. Sheikh, FRCS (C/Th), MBBS, Abdelsalam M. Elhenawy, MD, PhD, Manjula Maganti, MSc, Susan Armstrong, MSc, Tirone E. David, MD, and Christopher M. Feindel, MD, Toronto, Ontario, Canada

We document the short- and long-term outcomes of patients undergoing simultaneous aortic and mitral valve surgery for active infective endocarditis. Significant perioperative and long-term morbidity and mortality are seen. Increasing age, diabetes mellitus, preoperative shock, and prosthetic endocarditis were significant independent predictors of death from all causes.

- 76 Comparison of radial artery patency according to proximal anastomosis site: Direct aorta to radial artery anastomosis is superior to radial artery composite grafting**
Sung-Ho Jung, MD, Hyun Song, MD, Suk Jung Choo, MD, Hyung Gon Je, MD, Cheol Hyun Chung, MD, Joon-Won Kang, MD, and Jae Won Lee, MD, Seoul, Republic of Korea

The current retrospective study was conducted to compare the patency of RA grafts according to their use as aorta-RA or composite RA graft conduits in CABG. The results showed that direct aorta-RA anastomosis yields superior results to RA composite grafting in both the early and the late periods.

Congenital Heart Disease (CHD)

- 84 Effective transcatheter valve implantation after pulmonary homograft failure: A new perspective on the Ross operation**
Johannes Nordmeyer, MD, Philipp Lurz, MD, Victor T. Tsang, FRCS, Louise Coats, MRCP, Fiona Walker, MRCP, Andrew M. Taylor, MD, MRCP, FRCP, Sachin Khambadkone, MD, Marc R. de Leval, MD, FRCS, and Philipp Bonhoeffer, MD, London, United Kingdom

The Ross procedure, an otherwise attractive treatment for aortic valve lesions in young patients, suffers from the need for a conduit between the right ventricle and the pulmonary artery. Percutaneous pulmonary valve implantation, however, provides an effective follow-up treatment for failure of this conduit after the Ross procedure.

- 89 Clinical outcome 5 to 18 years after the Fontan operation performed on children younger than 5 years**
 *Daniëlle Robbers-Visser, MD, Livia Kapusta, MD, PhD, Lennie van Osch-Gevers, MD, PhD, Jan L. M. Strengers, MD, PhD, Eric Boersma, PhD, Yolanda B. de Rijke, PhD, Frans Boomsma, PhD, Ad J. J. C. Bogers, MD, PhD, and Willem A. Helbing, MD, PhD, Rotterdam, Nijmegen, and Utrecht, The Netherlands*

Clinical condition of children at least 5 years after the Fontan operation performed when they were younger than 5 years of age was acceptable, with normal global ventricular function, moderately decreased exercise capacity, and NT-pro-BNP levels within reference range. Systemic ventricular mass was elevated, however, suggesting contractility-afterload mismatch.

- 96 Blood flow distribution in a large series of patients having the Fontan operation: A cardiac magnetic resonance velocity mapping study**
Kevin K. Whitehead, MD, PhD, Kartik S. Sundareswaran, MS, W. James Parks, MD, Matthew A. Harris, MD, Ajit P. Yoganathan, PhD, and Mark A. Fogel, MD, FACC, Philadelphia, Pa, and Atlanta, Ga

To determine flow distribution in the cavopulmonary connections of patients having the Fontan procedure, we measured caval and pulmonary flows in 105 patients using through-plane CMR velocity mapping. Total caval flow was $2.9 \pm 1.0 \text{ L} \cdot \text{min}^{-1} \cdot \text{m}^{-2}$. Total pulmonary flow was $2.5 \pm 0.8 \text{ L} \cdot \text{min}^{-1} \cdot \text{m}^{-2}$, with 55% to the right lung. These flows were not affected by Fontan type.

(continued on page 16A)

Table of Contents (continued)

103 Risk factors for early pulmonary valve replacement after valve disruption in congenital pulmonary stenosis and tetralogy of Fallot

Brian Kogon, MD, Courtney Plattner, BA, Paul Kirshbom, MD, Kirk Kanter, MD, Traci Leong, PhD, Theresa Lyle, NPN, Staci Jennings, RN, Mike McConnell, MD, and Wendy Book, MD, Atlanta, Ga

Management of tetralogy of Fallot and pulmonary stenosis often results in pulmonary insufficiency. Although this is typically well tolerated for many years, compensatory mechanisms eventually fail and complications develop. This study helps elucidate the factors that affect a patient's ability to tolerate pulmonary insufficiency before requiring pulmonary valve replacement.

Evolving Technology/ Basic Science (ET/BS)

109 Minimally invasive surgical ablation of atrial fibrillation: Six-month results

James R. Edgerton, MD, James H. McClelland, MD, David Duke, MD, Marc W. Gerdisch, MD, Bryan M. Steinberg, MD, Scott H. Bronleewe, MD, Syma L. Prince, RN, Morley A. Herbert, PhD, Shannon Hoffman, RN, and Michael J. Mack, MD, Dallas, Tex, Indianapolis, Ind, Tacoma Park, Md, Eugene, Ore, and Tampa, Fla

This is a multicenter study of minimally invasive ablation for atrial fibrillation involving identifying and ablating ganglionated plexi. Six-month follow-up analyses of ECG and long-term monitoring data show excellent success in patients having paroxysmal atrial fibrillation. Comparison of ECG and long-term monitoring shows low sensitivity of ECG compared with long-term monitoring.

115 Endovascular treatment of acute and chronic aortic dissection: Midterm results from the Talent Thoracic Retrospective Registry

Stephan Kische, MD, Marek P. Ehrlich, MD, Christoph A. Nienaber, MD, Hervé Rousseau, MD, Robin Heijmen, MD, Philippe Piquet, MD, Hüseyin Ince, MD, Jean-Paul Beregi, MD, and Rossella Fattori, MD, Rostock, Germany; Vienna, Austria; Toulouse, Marseille, and Lille, France; Nieuwegein, The Netherlands; and Bologna, Italy

Endovascular treatment for aortic dissection is associated with reasonably low morbidity and mortality rates. Long-term surveillance is crucial to define more comprehensively the durability of stent-graft treatment of aortic dissection and to determine which patients are appropriate candidates for stent-graft therapy.

125 Evaluation of the PAS-Port Proximal Anastomosis System in coronary artery bypass surgery (the EPIC trial)

John D. Puskas, MD, Michael E. Halkos, MD, Husam Balkhy, MD, Michael Caskey, MD, Mark Connolly, MD, John Crouch, MD, Anno Diegeler, MD, PhD, Jan Gummert, MD, PhD, Wolfgang Harringer, MD, Valavanur Subramanian, MD, Francis Sutter, DO, and Klaus Matschke, MD, PhD, for the EPIC Trial Investigators, Atlanta, Ga; Milwaukee, Wis; Scottsdale, Ariz; Newark, NJ; Bad Neustadt, Jena, Hannover, and Dresden Germany; New York, NY; and Wynnewood, Pa


The Cardica PAS-Port proximal anastomosis device produces a quick and effective anastomosis without the need for aortic clamping with a 9-month patency rate comparable to a hand-sewn anastomosis.

133 Real-time assessment of cardiac perfusion, coronary angiography, and acute intravascular thrombi using dual-channel near-infrared fluorescence imaging

Eiichi Tanaka, MD, PhD, Frederick Y. Chen, MD, PhD, Robert Flaumenhaft, MD, PhD, Gwenda J. Graham, PhD, Rita G. Laurence, BS, and John V. Frangioni, MD, PhD, Boston, Mass

We demonstrate that methylene blue is an approximately 700-nm near-infrared fluorophore that provides real-time visual assessment of cardiac perfusion after intravenous bolus injection. In conjunction with 800-nm independent fluorophores, simultaneous assessment of coronary angiography, cardiac perfusion, and intravascular thrombi in real time is possible.

(continued on page 17A)

- 141 Dysfunction induced by ischemia versus edema: Does edema matter?** 
Tanya L. Butler, BSc, PhD, Jonathan R. Egan, MBBS, FRACP, Fabian G. Graf, Carol G. Au, BSc, Aisling C. McMahon, PhD, Kathryn N. North, MD, FRACP, and David S. Winlaw, MD, FRACS, Sydney, Australia


We examined function after cardiac edema or ischemia in isolated cardiomyocytes and ex vivo perfused hearts. Ischemia induced considerable functional impairment. Function was temporarily reduced in the presence of additional heart water. Our data dispute the importance given to edema-mediated dysfunction after cardiac surgery.

- 148 The effect of biventricular pacing on cardiac function after weaning from cardiopulmonary bypass in patients with reduced left ventricular function: A pressure–volume loop analysis**
Thorsten Hanke, MD, Martin Misfeld, MD, PhD, Matthias Heringlake, MD, Jan J. Schreuder, MD, Uwe K. H. Wiegand, MD, and Frank Eberhardt, MD, Lübeck, Germany, and Milan, Italy

In patients with severely reduced left ventricular function undergoing coronary artery bypass grafting, temporary atrial synchronous biventricular and left ventricular pacing improve left ventricular systolic function relative to standard atrial synchronous right ventricular outflow tract pacing after weaning from cardiopulmonary bypass.

- 157 A new de-airing technique that reduces systemic microemboli during open surgery: A prospective controlled study**
Faleh Al-Rashidi, MD, Sten Blomquist, MD, PhD, Peter Höglund, MD, PhD, Carl Meurling, MD, PhD, Anders Roijer, MD, PhD, and Bansri Koul, MD, PhD, Lund, Sweden

Bilateral-induced pulmonary collapse before exposure of left-sided heart cavities to the ambient air together with staged pulmonary perfusion and ventilation during de-airing reduce systemic air embolism after true open surgery.

- 163 Signal transducer and activator of transcription 3–stimulated hypoxia inducible factor-1 α mediates estrogen receptor- α –induced mesenchymal stem cell vascular endothelial growth factor production** 
Meijing Wang, MD, Jiangning Tan, MD, PhD, Arthur Coffey, MD, John Fehrenbacher, MD, Brent R. Weil, MD, and Daniel R. Meldrum, MD, Indianapolis, Ind

E2 regulates MSC VEGF production. MSCs isolated from wild-type, ER α KO, ER β KO, and STAT3KO mice reveal that E2-induced VEGF production from MSCs is mediated through ER α -activated STAT3 mediated HIF-1 α expression.

- 172 Chronic septal infarction confers right ventricular protection during mechanical left ventricular unloading**
James Mau, BSc, MB, BS, Stuart Menzie, MB, BS, FRACS, Yifei Huang, MD, PhD, Michael Ward, MB, BS, PhD, FRACP, and Stephen Hunyor, MB, BS, MD, MTM, FRACP, FACC, St Leonards and Sydney, Australia

The RV response to LV unloading is distinctly different in hearts with chronic septal infarction compared with hearts without such injury. This extends previous studies limited to temporary ischemia and has clinical implications for patients requiring LV mechanical unloading.

(continued on page 18A)

Table of Contents (continued)

Perioperative Management (PM)

- 179 Diagnostic value of endobronchial ultrasonography for pulmonary tuberculosis**
Shu-Min Lin, MD, Fu-Tsai Chung, MD, Chien-Da Huang, MD, Wen-Te Liu, MD, Chih-Hsia Kuo, MD, Chun-Hua Wang, MD, Kang-Yun Lee, MD, PhD, Chien-Ying Liu, MD, Horng-Chyuan Lin, MD, and Han-Pin Kuo, MD, PhD, Taipei, Taiwan

In patients with negative sputum acid-fast bacilli smears or no sputum production, the introduction of endobronchial ultrasonography increased the diagnostic yields for tuberculosis.

- 185 Increased vascular permeability after cardiopulmonary bypass in patients with diabetes is associated with increased expression of vascular endothelial growth factor and hepatocyte growth factor**
Sirisha Emani, PhD, Basel Ramlawi, MD, Neel R. Sodha, MD, Jian Li, MD, PhD, Cesario Bianchi, MD, PhD, and Frank W. Sellke, MD, Boston, Mass

Serum levels of growth factors and gene expression profile of genes involved in growth factors signaling were examined following cardiac surgery in patients with and without diabetes. Length of hospitalization and weight gain were significantly greater for patients with poorly controlled diabetes compared with patients without diabetes, and correlated with serum levels of vascular endothelial factor and hepatocyte growth factor.

- 192 The impact of smoking in primary spontaneous pneumothorax**
Yeung-Leung Cheng, MD, PhD, Tsai-Wang Huang, MD, Chih-Kung Lin, MD, Shih-Chun Lee, MD, Ching Tzao, MD, PhD, Jen-Chih Chen, MD, and Hung Chang, MD, PhD, Taipei, Taiwan, ROC

The study attempted to clarify the pathophysiologic effects of cigarette smoking and its clinical correlations in primary spontaneous pneumothorax. Cigarette smoking is associated with the pathophysiologic consequence of extensive respiratory bronchiolitis and the recurrence rate of primary spontaneous pneumothorax.

- 196 Correlation between plasma osteopontin levels and aortic valve calcification: Potential insights into the pathogenesis of aortic valve calcification and stenosis**
Pey-Jen Yu, MD, Adam Skolnick, MD, Giovanni Ferrari, PhD, Katherine Heretis, MD, Paolo Mignatti, MD, Giuseppe Pintucci, PhD, Barry Rosenzweig, MD, Juan Diaz-Cartelle, MD, Itzhak Kronzon, MD, Gila Perk, MD, Harvey I. Pass, MD, Aubrey C. Galloway, MD, Eugene A. Grossi, MD, and Juan B. Grau, MD, New York, NY

Increased levels of plasma osteopontin, a proinflammatory glycoprotein associated with ectopic calcification, are associated with the presence of aortic valve calcification and stenosis.

- 200 Uric acid levels and outcome from coronary artery bypass grafting ▲**
Graham S. Hillis, MBChB, PhD, Brian H. Cuthbertson, MBChB, MD, Patrick H. Gibson, BM, BCh, Jane D. McNeilly, BSc, MSc, PhD, Graeme S. MacLennan, MSc, Robert R. Jeffrey, MBChB, Keith G. Buchan, MBChB, Hussein El-Shafei, MBChB, MD, George Gibson, MBChB, and Bernard L. Croal, MBChB, MD, Aberdeen, United Kingdom

This study assesses the relationship between serum uric acid levels and the outcome of patients undergoing coronary artery bypass grafting. It demonstrates that higher levels of uric acid are associated with poorer survival. Their utility is independent of other recognized prognostic factors and well-validated conventional methods of risk prediction.

(continued on page 19A)

Cardiothoracic Transplantation (TX)

206 The effects of normoxic versus hyperoxic cardiopulmonary bypass on oxidative stress and inflammatory response in cyanotic pediatric patients undergoing open cardiac surgery: A randomized controlled trial

Massimo Caputo, MD, Amir Mokhtari, MRCS, Chris A. Rogers, PhD, Nayia Panayiotou, MSc, Qiang Chen, PhD, Mohamed T. Ghorbel, PhD, Gianni D. Angelini, FRCS, and Andrew J. Parry, FRCS, Bristol, United Kingdom

This randomized trial evaluates the effects of normoxic versus hyperoxic CPB on inflammatory response and organ damage in cyanotic children undergoing heart surgery. Controlling reoxygenation was associated with reduced release of markers of myocardial, hepatic, and cerebral damage and oxidative stress, and similar whole body inflammatory and stress response.

215 Vascular abnormalities and cardiomyocyte lipofuscin deposits in endomyocardial biopsy specimens of heart transplant recipients: Are they related to the development of cardiac allograft vasculopathy?

Michael Zakliczynski, MD, Jerzy Nozynski, MD, Dominika Konecka-Mrowka, PhD, Anna Krynicka-Mazurek, MD, Marcin Swierad, MD, Marcin Maruszewski, MD, Roman Przybylski, MD, and Marian Zembala, MD, PhD, Zabrze and Rybnik, Poland

A re-evaluation of 1071 endomyocardial biopsy specimens in 68 heart transplant recipients was performed searching for microvascular diseases and lipofuscin in cardiocytes. Results of 2-week, 12-month, and 36-month biopsy specimens were compared with results of coronary angiograms. The presence of lipofuscin in 12-month biopsy specimen, but not microvascular abnormalities, may predict development of angiographically confirmed coronary vasculopathy.

222 Right but not left ventricular function recovers early after living-donor lobar lung transplantation in patients with pulmonary arterial hypertension

Shinichi Toyooka, MD, Kengo Fukushima Kusano, MD, Keiji Goto, MD, Yamane Masaomi, MD, Takahiro Oto, MD, Yoshifumi Sano, MD, Soichiro Fuke, MD, Megumi Okazaki, RN, Toru Ohe, MD, Shingo Kasahara, MD, Shunji Sano, MD, and Hiroshi Date, MD, Okayama and Kyoto, Japan

Right and left ventricular functions in patients with PAH after living-donor lobar lung transplantation were evaluated. Right ventricular function recovered early, but recovery of left ventricular function required 6 to 12 months. Improved cardiac function was sustained for up to 3 years, suggesting long-term durability of cardiac function recovery.

227 Bridging patients after salvage from bridge to decision directly to transplant by means of prolonged support with the CentriMag short-term centrifugal pump

Saleem Haj-Yahia, BSc, MD, Emma J. Birks, MRCP, PhD, Mohammed Amrani, MD, PhD, Mario Petrou, FRCS, PhD, Toufan Bahrami, MD, Gilles Dreyfus, MD, PhD, and Asghar Khaghani, FRCS, London, United Kingdom

Prolonged use of the CentriMag (Levitronix, Waltham, Mass) for as long as 3 months appeared to be safe and cost-effective for bridging selected patients directly to transplant after salvage. Further clinical experience is still needed.

Brief Clinical Reports

231 A difficult case: Ectopic thyroid, bronchial anomalies, and incidentaloma in a patient with lung carcinoma

Salih Topcu, MD, Serife Tuba Liman, MD, Aykut Elicora, MD, Ferzat Zanuzi, MD, Serkan Isgoren, MD, and Deniz Filinte, MD, Kocaeli, Turkey

(continued on page 20A)

Table of Contents (continued)

233 Potential for benefits of aprotinin use to outweigh risks in patients undergoing the Ross procedure

Stephen Arthur Barnett, MBBS, FRACS, Matthew Liava'a, MBBS, and Peter D. Skillington, MBBS, FRACS, Melbourne, Australia

234 Left main compression syndrome by idiopathic pulmonary artery aneurysm caused by medial necrosis Erdheim-Gsell combined with bicuspid pulmonary valve

Daniel Jodocy, MD, Guy J. Friedrich, MD, Johannes O. Bonatti, MD, Silvana Müller, MD, Guenther Laufer, MD, Otmar Pachinger, MD, FECTS, Patrizia Moser, MD, and Gudrun M. Feuchtner, MD, Innsbruck, Austria

236 Aortic pseudoaneurysm compressing the left coronary artery

George V. Moukarbel, MD, Hani Jneid, MD, Jennifer D. Walker, MD, Joseph M. Garasic, MD, and Thomas J. Wang, MD, Boston, Mass

237 Persistent interstitial pulmonary emphysema requiring pneumonectomy

Elizabeth Belcher, MRCP, FRCS, PhD, M. Ali Abbasi, MRCS, David M. Hansell, FRCP, FRCR, Lorrette Ffolkes, MRCP, FRCPATH, Andrew G. Nicholson, FRCPATH, and Peter Goldstraw, FRCS, London, United Kingdom

Brief Technique Reports

240 Surgical resection of resectable thoracic metastatic hepatocellular carcinoma after liver transplantation

Chong Zhang, MD, Jian Rao, MD, Zhengliang Tu, MD, and Yiming Ni, MD, Hangzhou, China

241 Radio-guided surgery for ventricular remodeling in patients with ischemic dilated cardiomyopathy: A new tool to discriminate in vivo viable myocardium and scar

Marco Spadafora, MD, Fiore Manganelli, MD, Luigi Mansi, MD, Paolo Ferrara, MD, Paolo Miletto, MD, Giuseppe Rosato, MD, Pierluigi Costanzo, MD, and Alberto Cuocolo, MD, Avellino and Naples, Italy

244 "Circular clamp" excision: A new technique for lung metastasectomy

Francesco Petrella, MD, Francesco Leo, MD, PhD, Nelson Alves Dos Santos, MD, Giulia Veronesi, MD, Piergiorgio Solli, MD, PhD, Alessandro Borri, MD, Domenico Galetta, MD, Roberto Gasparri, MD, Paolo Scanagatta, MD, and Lorenzo Spaggiari, MD, PhD, Milan, Italy

Brief Research Reports

246 Combined use of extracorporeal membrane oxygenation and activated protein C for severe acute respiratory distress syndrome and septic shock

Yoan Lamarche, MD, Anson Cheung, MD, Keith R. Walley, MD, and Peter Dodek, MD, Vancouver, British Columbia, Canada

248 The first self-endothelialized titanium-coated glutaraldehyde-fixed heart valve prosthesis within systemic circulation

Norbert W. Guldner, MD, Inka Jasmund, MS, Hannörg Zimmermann, MS, Markus Heinlein, MS, Britta Girndt, MS, Martin Großherr, MD, Mathias Klinger, MD, and Hans H. Sievers, MD, Nürnberg and Lübeck, Germany

Letters to the Editor

251 Axillary artery cannulation pitfalls

Giuseppe Rescigno, MD, Carlo Aratari, MD, FECTS, and Marco L. S. Matteucci, MD, Ancona, Italy

(continued on page 21A)

251	Reply to the Editor <i>Kazumasa Orihashi, MD, Taijiro Sueda, MD, Kenji Okada, MD, and Shinya Takahashi, MD, Hiroshima, Japan</i>	EDITORIAL
252	Endoscopic treatment of airway stenosis after lung transplantation <i>Marco Anile, MD, Tiziano De Giacomo, MD, and Federico Venuta, MD, Rome, Italy</i>	GTS
252	Reply to the Editor <i>Patricia A. Thistlethwaite, MD, PhD, and James Harrell, MD, San Diego, Calif</i>	
253	Quality improvement program decreases mortality after cardiac surgery <i>Fernando A. Atik, MD, Brasilia, Brazil</i>	
254	Reply to the Editor <i>Sotiris C. Stamou, MD, PhD, and Kevin W. Lobdell, MD, Charlotte, NC</i>	ACD
255	Transmission of human T-lymphotropic virus type I by bilateral living-donor lobar lung transplantation <i>Satomi Yara, MD, PhD, Jiro Fujita, MD, PhD, and Hiroshi Date, MD, PhD, Okinawa, Kyoto, and Okayama, Japan</i>	
256	Does hypercholesterolemia improve operative outcomes in patients without coronary artery disease who undergo cardiac surgery? <i>Luca Mascitelli, MD, Francesca Pezzetta, MD, and Mark R. Goldstein, MD, FACP, Udine and Tolmezzo, Italy; and Bonita Springs, Fla</i>	CHD
256	Reply to the Editor <i>Minoru Tabata, MD, MPH, Tokyo, Japan</i>	
257	Hypoxia-inducible factor-1α in stem cell preconditioning: Mechanistic role of hypoxia-related micro-RNAs <i>Khawaja Husnain Haider, MPharm, PhD, Ha Won Kim, PhD, and Muhammad Ashraf, PhD, Cincinnati, Ohio</i>	ET/BS
257	The implications of outcome predictors when transitioning from arterial to double-switch surgery <i>Jeffrey Shuhaiber, MD, Maywood, Ill</i>	
258	Contegra and extracardiac Fontan <i>Paul Schoof, MD, PhD, and Tjalling Waterbolk, MD, Nijmegen and Groningen, The Netherlands</i>	
259	Late rupture of expanded polytetrafluoroethylene neochordae used for mitral valve repair <i>Gonçalo Coutinho, MD, Lina Carvalho, MD, PhD, and Manuel J. Antunes, MD, PhD, DSc, Coimbra, Portugal</i>	PM
259	Biventricular pacing after cardiac surgery <i>Michael Flynn, FRCS, John H. Dark, FRCS, and Janet M. McComb, FRCP, MD, Newcastle upon Tyne, United Kingdom</i>	
260	Percutaneous aortic valve implantation: What does oversizing mean? <i>Rachid Zegdi, MD, PhD, Paul Achouh, MD, PhD, Didier Blanchard, MD, Antoine Lafont, MD, PhD, and Jean-Noël Fabiani, MD, Paris, France</i>	TX

(continued on page 22A)

Table of Contents (continued)

260 Prognostic significance of visceral pleural invasion and tumor size in non-small cell lung cancer

Jung-Jyh Hung, MD, Jung-Sen Liu, MD, PhD, and Wen-Hu Hsu, MD, Taipei, Taiwan

261 Serum brain natriuretic peptide for prediction of successful medical treatment of patent ductus arteriosus in premature infants

Atsushi Ohashi, MD, and Kazunari Kaneko, PhD, MD, Osaka, Japan

262 Mechanism of myocardial protection by pressure-volume unloading involves stretch-induced pathophysiology

Alfred C. Nicolosi, MD, Milwaukee, Wis

Meetings and Courses

263 Meetings and Courses

Announcements

The American Association for Thoracic Surgery

266 *Annual Meeting Recap*

267 *Save the Date!*

268 *AATS Meetings and Sponsored Events*

268 *2010 AATS Academy Applications Now Available*

269 *Applications for Membership Now Available Online*

The Western Thoracic Surgical Association

269 *Applications for Membership*

Thoracic Surgery Foundation for Research and Education

269 *2009 Research Awards*

270 *2009 Education Awards*

The American Board of Thoracic Surgery

270 *Notices*

270 *Requirements for Maintenance of Certification*

Reader Services

23A **JTCVS Disclosure Statement**

24A **Information for Authors**

29A **Information for Readers**

